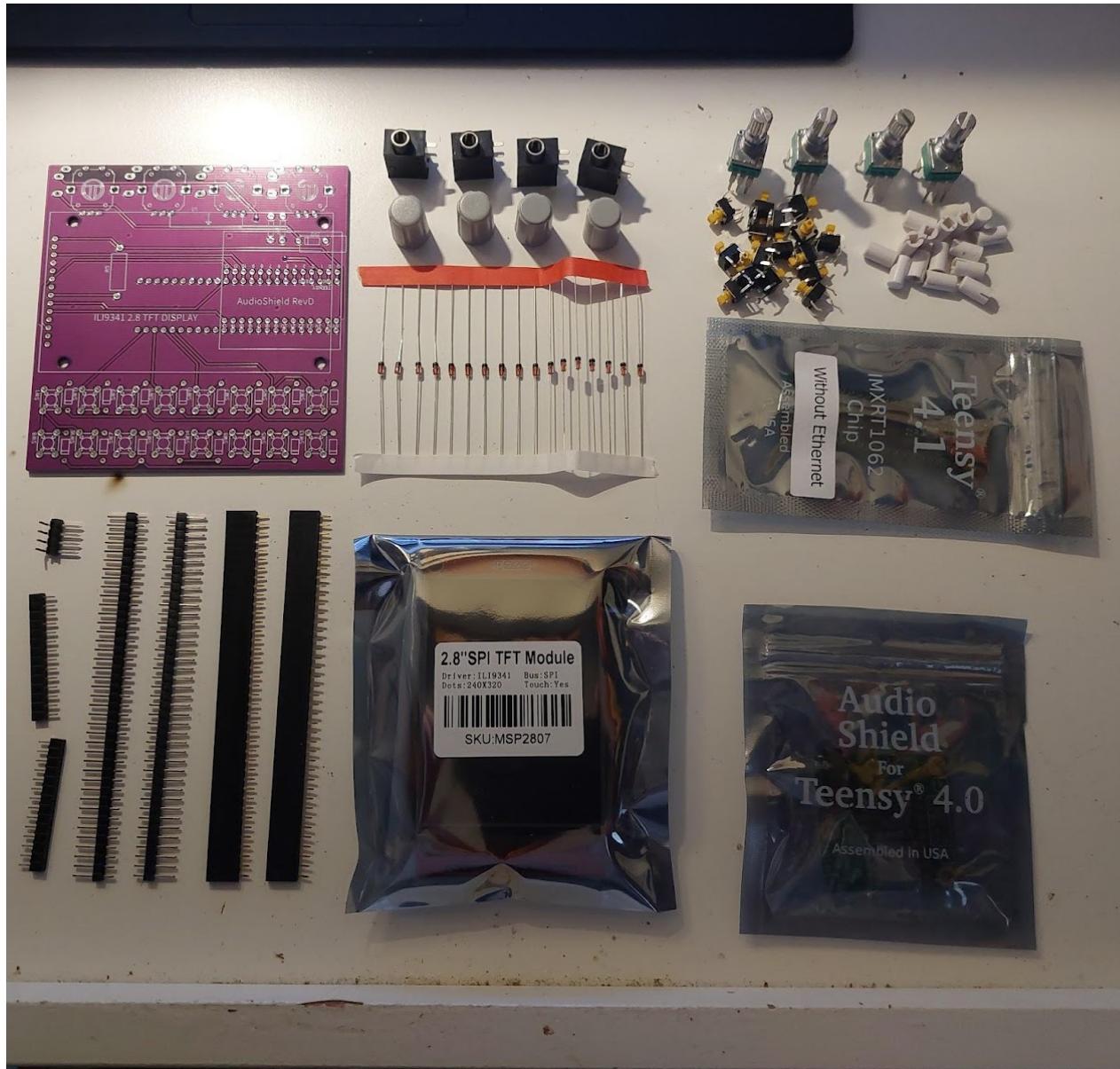
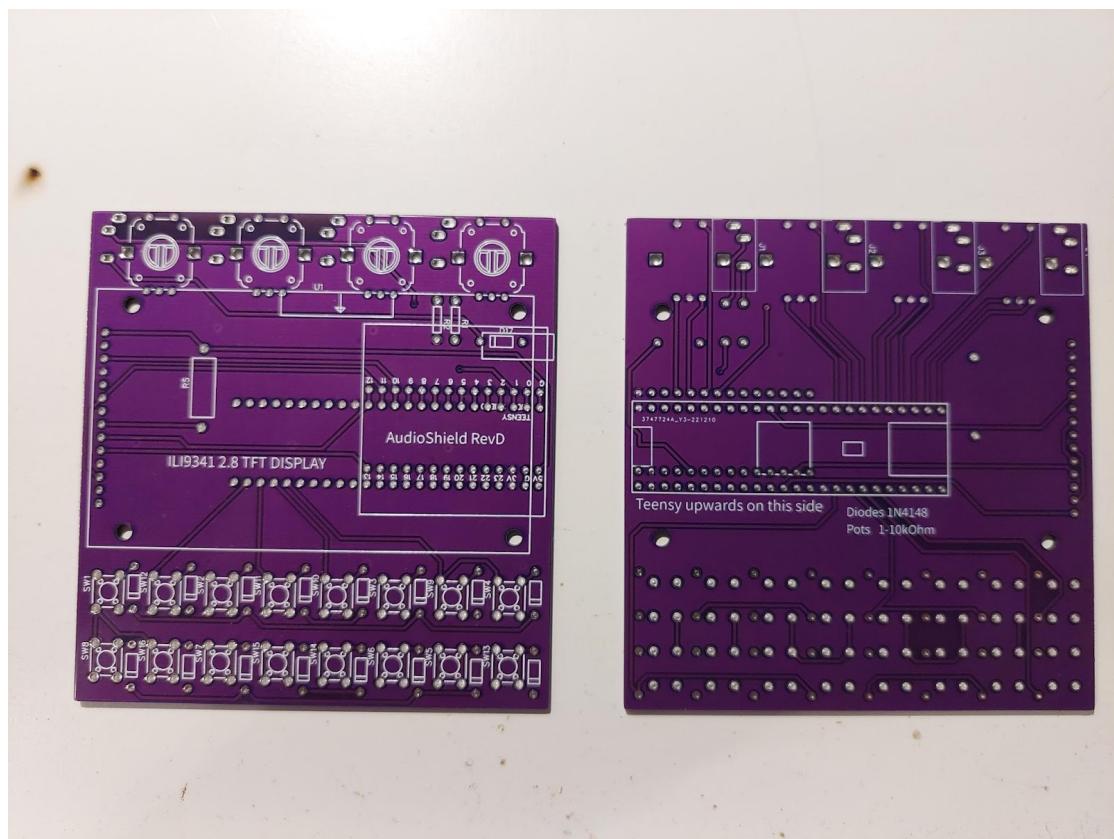


Build Guide:

All parts:



After unpacking and inspecting your PCB. It should look like this. (Colour may differ).



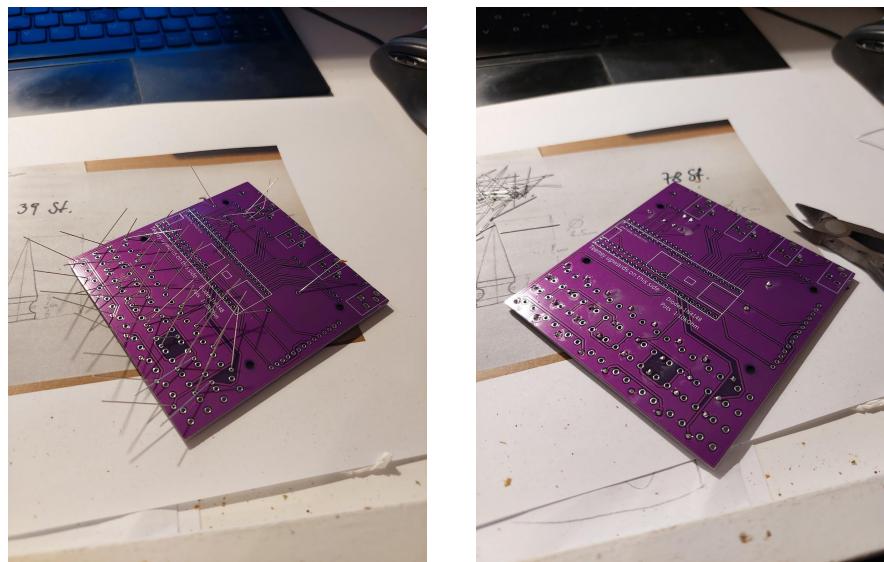
Solder the diodes and resistors

R5: 100R

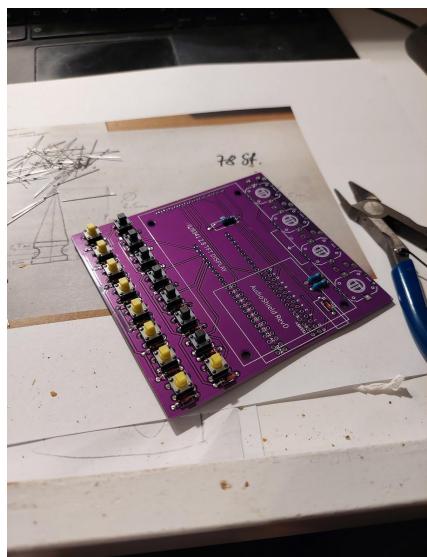
R1 R2: 10-47R (yes, anything in between, you have by hand)

47R was Paul Stoffregens (creator of Teensy) official recommendation

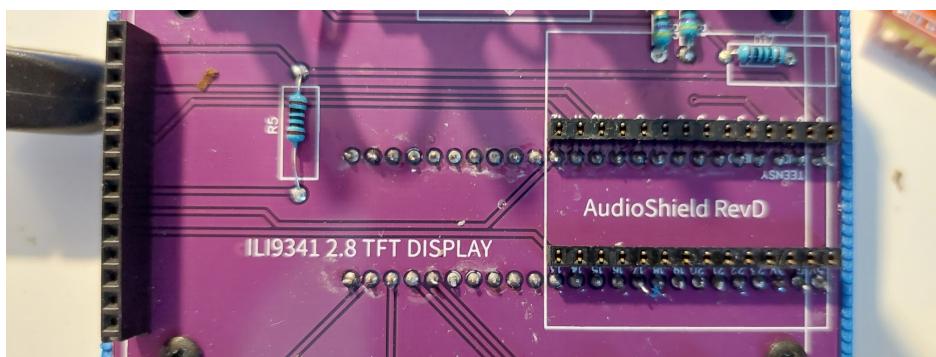
10-33R is the actual recommendation for MIDI powered via 3.3V



Solder the Buttons



Solder the headers



for	pcs	Pins	height	side of PCB
Teensy 4.1	2	24	TALL	bottom
Audio Shield	2	14	FLAT	top
Display	1	14	TALL	top

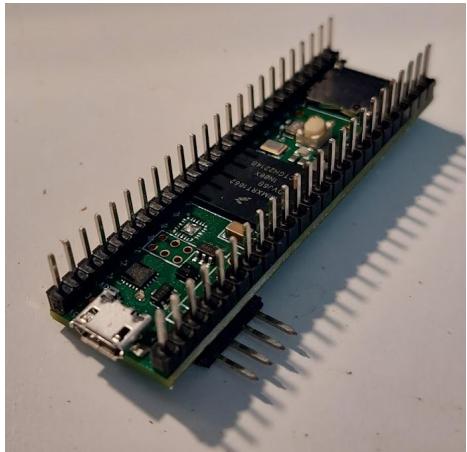
Solder the Encoders

!!snip off both snap-in-Legs, on the sides of the encoders!!

Solder the jacks on the bottom side

Solder Teensy 4.1 headers

- pay attention to the orientation of the headers
- dont forget the usb host pins (right angled)



Solder Audio shield Headers

At the moment of writing, the REV D Audio shield has been replaced, by the audio shield REV D2, but it seems as if they were fully compatible, please let me know if you have any issues.

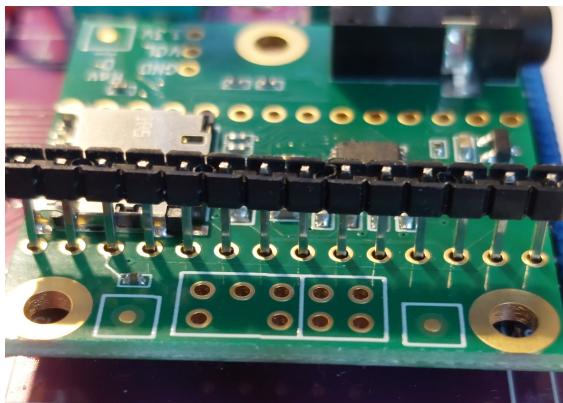
- pay attention to the pin length

Best practice:

Take the audio shield and a standard 14 pin male header, move the plastic to one side



Place the audio shield above the female header and gently press the male headers into their position

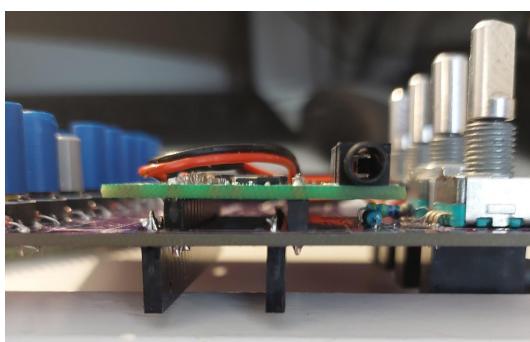


use the Touchpen, provided with the display, to press all pins into the female header

(with the Touchpen you can also get the audio shield out from the female header, by moving and slowly lifting the pen into the gap between pcb and audio shield)

Solder the Pins and cut the rest from the topside of.

This should be the view from the side

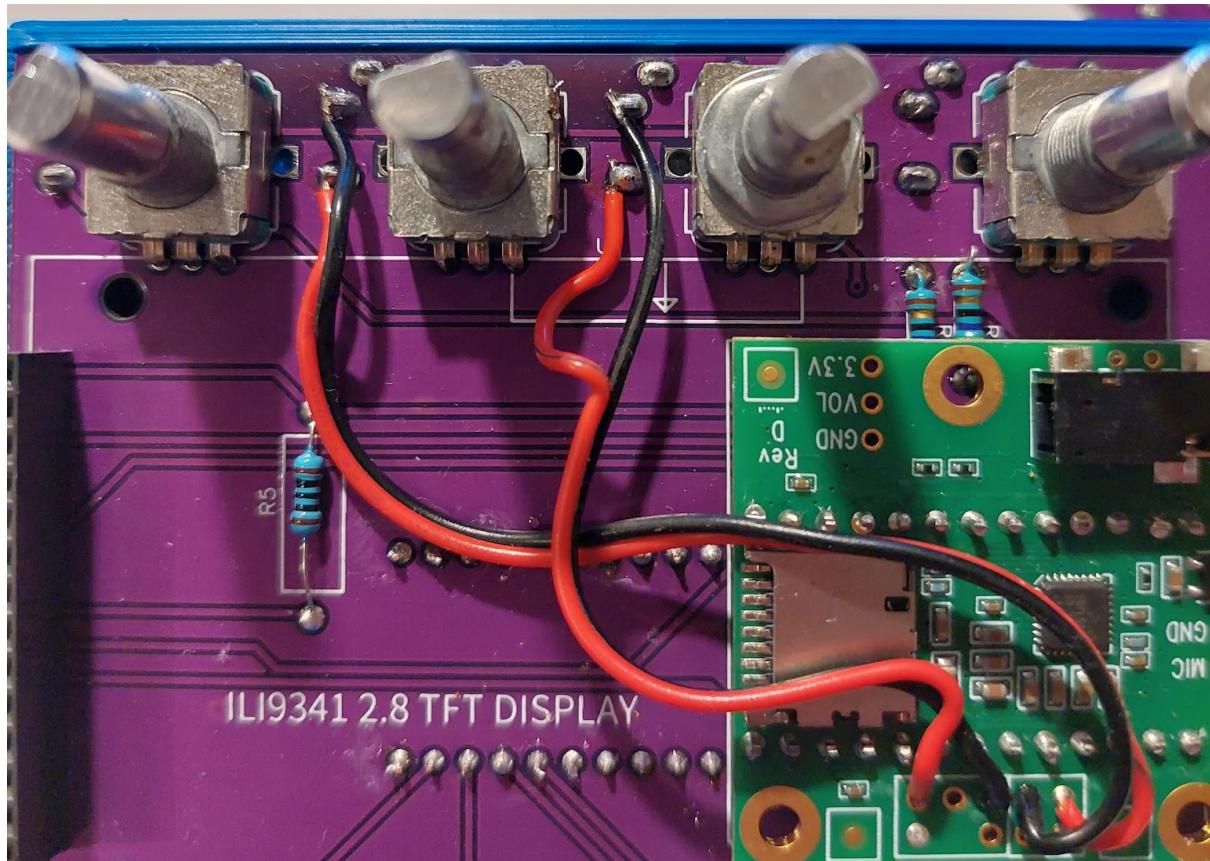


Solder the Audio connections

Since I simply didn't want to also implement the extra pins for the audio in and output, you have to do it by hand.

Take 2 pieces of a 2 wire cable each about 10cm long and solder them as shown in the picture.

This will provide a stereo In- and Output, though the left input is not used at the time of writing.



Assemble the PCB

- Before a first assembling please check if you have:
- soldered all buttons
- double checked the orientation of the diodes and if they are soldered properly
- If all headers all soldered properly (every pin)
- All Encoders and jacks are soldered, again, all pins and properly.
- Pins for the audio shield are cut down
- Audio IN/Out cables are soldered and fit under the display
- Everything is looking nice and sweet
- You've pet your pet.

Push the Display into its header, since header and Audio jack share the same height, there is no need to screw any screws into the pcb (atm they wouldn't fit anyways).
If not done yet, connect the Teensy to the PCB.

Prepare the 3d printed Housing

your 3d printed housing should look like this (color may differ)

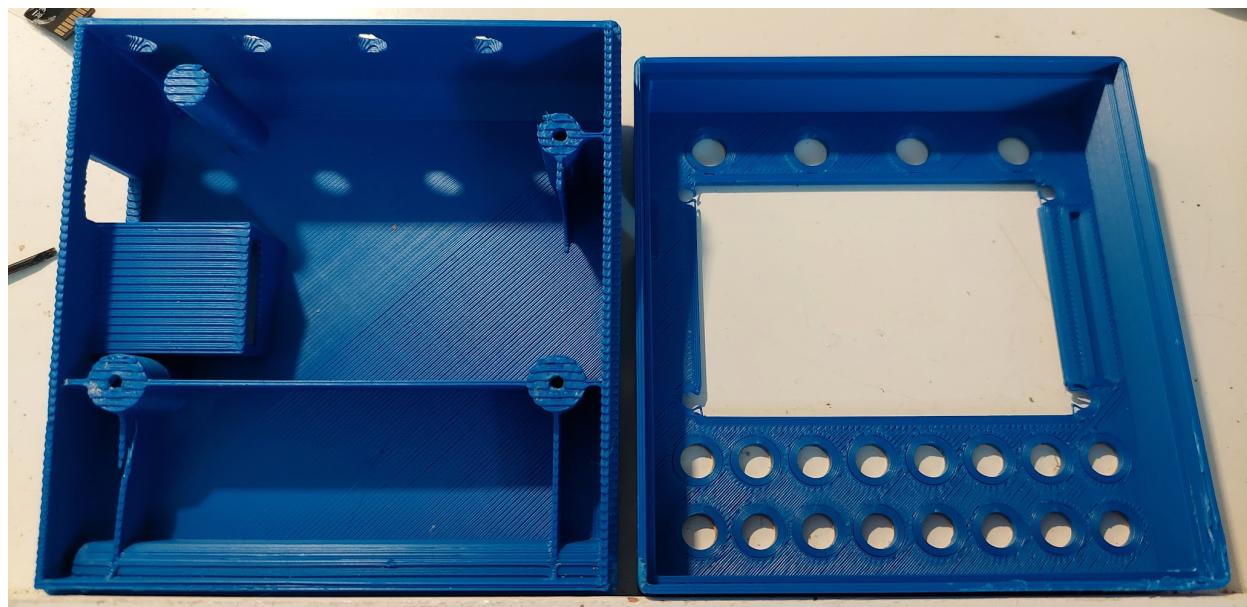
Printsettings:

Material: PLA

Layerheight: max 0.3mm

Support: Touch only build plate (cura setting)

Maybe you need to redrill the holes with a 6-6.5mm drill (depending on your printer!)

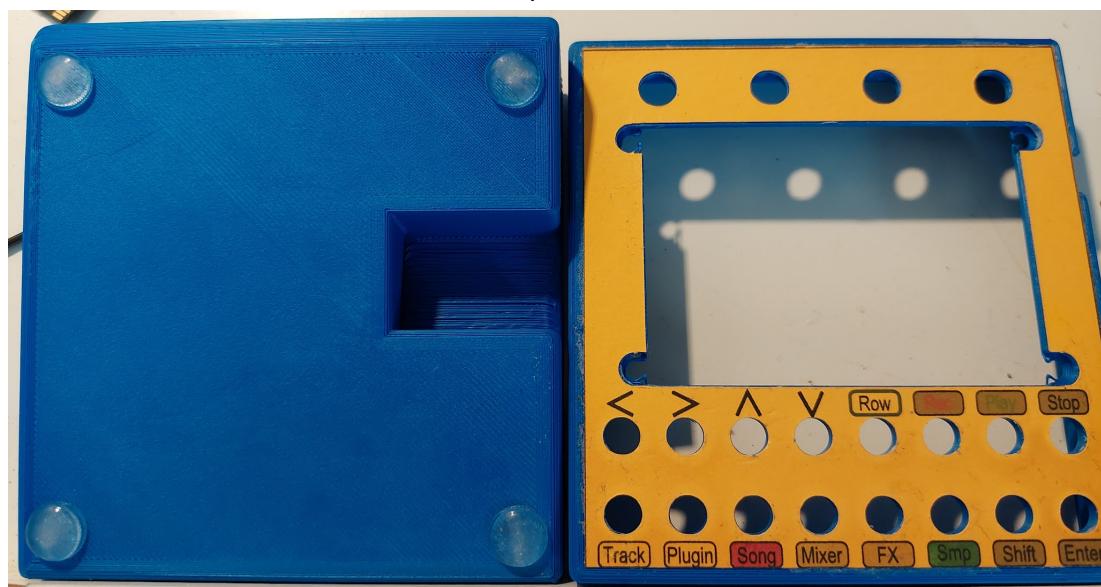


Remove the supports

Glue the Frontpanel paper onto the top part

(if you cant cut out the paper with a machine [maybe try a knife for CNC-Cutters and an attachment for your 3d printer], you can cut and drill the paper after the glue has dried with a sharp knife and drill)

and some rubber sockets on the bottom part

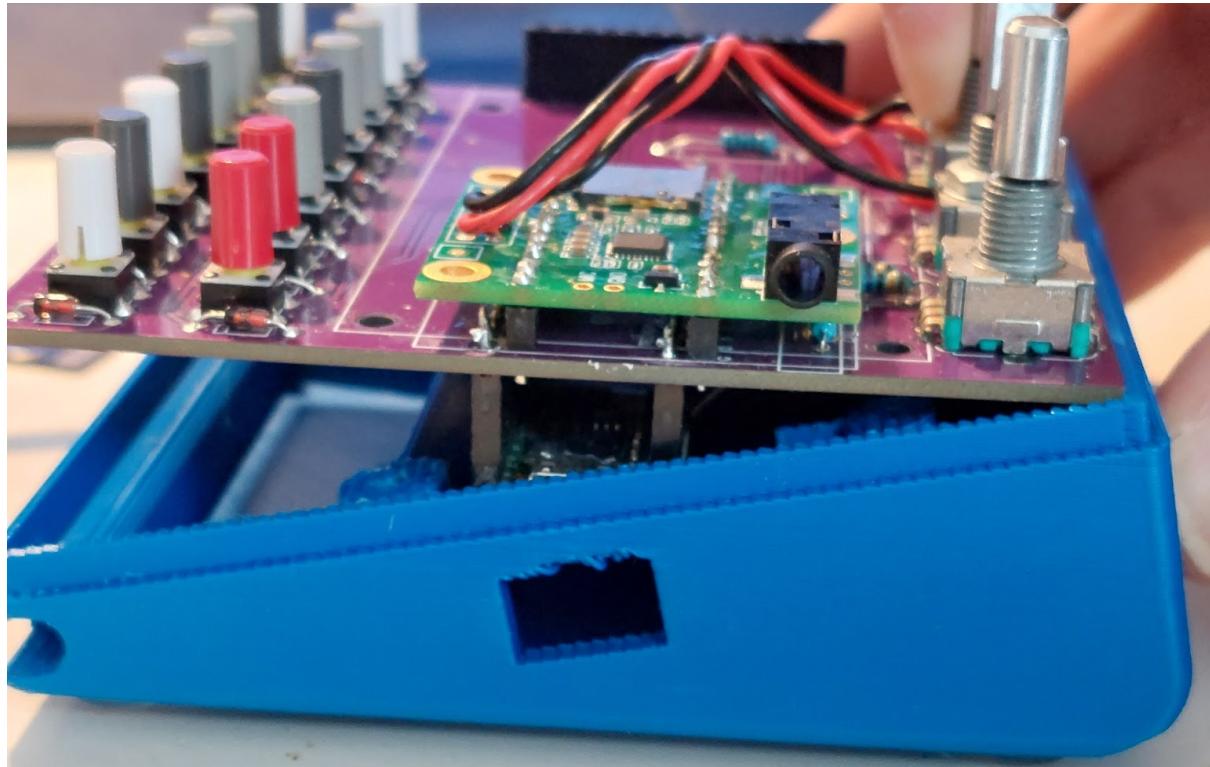


Connect the USB-HOST cable to the right angled headers on the teensy

Final assembly

If you havent done yet, push the original caps on the switches, you must hear and feel a click.

To get the pcb into the housing, move the pcb from above into the jack's holes and then push the rest of the pcb into the housing. No extra force needed, so if you hear and feel a click now, something got damaged.



If the pcb still want to lift on its own, check the usb host cable, if its in your way. If its only a small gap, you can use a screw for plastic to screw the pcb into the bottom holes in the display area.

Gently push the top Housing's part on the bottom part. Depending on your printer, the display should fit nicely into the frame.

Prepare the SD Card

Use a HC SD Card and drop the files from

<https://github.com/steven-law/Teensy-DAW/tree/main/sdcontent>

onto the Card. Without these files you wont be able to startup the device and to save/load your patterns, songs, plugin settings and recorded RAW files and other stuff.

I recommend taping a piece of gluestrip on the sd card to get the sd card easier out of the device (i can recommend this for many devices ;)).

Push the SD Card into the slot.



Upload the Program

Download the Teensy Loader from

<https://www.pjrc.com/teensy/loader.html>

Get the Latest .hex file from

<https://github.com/steven-law/Teensy-DAW>

You now should see a small startup routine and the TeensyTouchDAW Logo for a short time and then the Drum-Track Sequencer.

You have successfully built and programmed your TeensyTouchDAW!!

Trouble-shooting

When running into issues after building the device, it's recommended to double and triple resolder all the joints. (I got the feedback, that GND might be hard to solder)

The Display seems to start but shortly fails the startup routine after.

In most cases, the SD Card is damaged or not inserted correctly

Display stays black

Seems like Display got no Power at all or you forgot the Power Resistor
Resolder the Pins, check the R5 Resistor

A Bad humming sound

Try another Power Source, check your “Studio” for ground loops

When really want to make music get a decent power supply or use a Power-Bank
(Then there should be no noise at all)

Sync In/Out is not working

Yes indeed, these are not implemented at the time of writing

tbc